

Appl. No. 10/644,441
Amtd. Dated February 22, 2005
Reply to Office action of November 22, 2004

REMARKS

The Applicants have reviewed the Office action dated November 22, 2005 and thanks Examiner Binda for his detailed review of the present application. In response, the Applicants have amended claims 1, 2, 5, 9 and 12-14. Also, claims 15 and 17 have been amended but remain withdrawn at the present time pending the allowance of linking claim 14. Claims 3 and 8 have been canceled. Claims 20-23 have been added but do not add any new matter to the present application. Accordingly, claims 1-14 remain pending in the present application and claim 15-19 remain withdrawn from consideration. Accordingly, the Applicants request reconsideration of the application in view of the amendments above and following remarks.

Election/Restrictions

Claims 15-19 continue to be withdrawn pending the allowance of a generic or linking claim. In the Restriction and/or Election Requirement of September 15, 2004, the Examiner indicated that claim 14 links the inventions of Groups I and II. The restriction requirement was subject to the non-allowance of claim 14. In view of the amendment to independent claim 14, the Applicants believe the claim is allowable and hence, claims 15-19 are also allowable as dependent claims. Accordingly, the Applicants anticipate reinstatement of claim 15-19 upon allowance of independent claim 14.

Drawings

The Office action objected to the drawings because Figs. 2 & 3 used an inappropriate cross hatch pattern for the foam synthetic resin support member 30. Accordingly, the Applicants have amended the drawings, specifically Figures 2 and 3 to illustrate the appropriate cross hatch pattern for foam synthetic resin. Please see the attached replacement and annotated sheets of drawings. In view of the amendment to the drawings, the Applicants respectfully request removal of the objection.

Specification

The Office action objected to the specification because paragraph 0021 included the undefined acronym "NVH". Accordingly, the Applicants have amended the specification, specifically paragraph 0021 to define the acronym "NVH". In view of the amendment to the specification, the Applicants respectfully request removal of the objection to the specification.

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Claim Objections

The Office action objected to the claims because element of the claims were not separated by line indentation. Accordingly, the Applicants have amended claims 1 and 9 to include line indentations and appropriate punctuation to separate elements of the claims. In view of these amendments to the independent claims, the Applicants respectfully request removal of the objection.

Claim Rejections Under 35 U.S.C. §112

The Office action rejected claims 1-14 under 35 U.S.C. §112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

Specifically, the term "thin" in claims 1, 9 & 14 and the term "high" in claims 2 & 12 were relative terms that rendered the claims indefinite. Claims 1, 2, 9, 12 and 14 have been amended to delete the indefinite terms "thin-walled" and "high modulus". Accordingly, the Applicants have overcome the rejection, as the claims are no longer indefinite.

Also, the terms "rigid" and "flexible" in claims 1, 5, 9 and 13 were contradictory and hence rendering the claims indefinite. In response, the Applicants have amended dependent claims 5 and 13 to further define the foam as flexible before being impregnated with the resin or cement. In view of this amendment the rejection is overcome, as the claims are no longer indefinite.

Claim Rejections Under 35 U.S.C. §102

The Office action rejects claims 1, 6-10 and 14 under 35 U.S.C. §102(b) as being anticipated by Breese et al. (U.S. Patent No. 6,234,911). Further, the Office action rejects claims 1, 3, 6-10 and 14 under 35 U.S.C. §102(b) as being anticipated by Hill et al. (U.S. Patent No. 6,254,488). Additionally, the Office action rejects claims 1, 3, 4, 6-11 and 14 under 35 U.S.C. §102(b) as being anticipated by Schuermann et al. (European Patent No. 0471240). Finally, the Office action rejects claims 1, 6-10 and 14 under 35 U.S.C. §102(e) as being anticipated by Armitage et al. (U.S. Patent No. 6,752,722). The Office action states that each reference discloses features of the claims as originally filed. However, in view of the amendments to independent claims 1, 9 and 14, the Applicants respectfully traverse the rejection.

Specifically, the independent claims 1, 9 and 14 have been amended to further define the support member as tubular and having a generally uniform outer diameter. As disclosed in the Background of the present application the overall weight of a propeller shaft is a continual

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concern in the industry; hence, the desire to produce propeller shafts of a smaller diameter. Further, while producing propeller shafts of smaller diameters is one solution to reducing the weight concern, manufacturers must also minimize the weight of any additional features, such as support member 30 of the present invention. While the support member 30 improves the rigidity of the propeller shaft, care must be taken to minimize the weight of this additional component. Accordingly, the support member of the present invention is tubular as opposed to cylindrical (as shown in Breeze and Armitage). The tubular design provides rigidity to the smaller diameter propeller shaft while minimizing the impact of the support member on the overall weight of the propeller shaft.

Additionally, while continually attempting to minimize the weight of propeller shafts, manufacturers must also generate designs that are simple to manufacture. Accordingly, the present invention includes the support member 30 having a generally uniform outer diameter. There are not any additional cavities (as in Hill) or convex shapes (as in Schuermann) that increase the difficulty of manufacturing the propeller shaft having support member 30.

In contrast to the amended claims of the present application, references fail to disclose specific features of the invention. Specifically, Breeze and Armitage simply disclose a noise reduction structure or insert member having a cylindrical shape. Breeze and Armitage fail to teach or suggest utilizing a tubular shape to reduce the overall weight of the propeller shaft. Further, Schuermann and Hill disclose a dampening material or inner core of a generally non-uniform shape. Hill includes a separate cavity to receive the dampening material and the Schuermann requires the inner cores to have a parabolic shape. Hill and Schuermann fail to teach or suggest a support member having a generally uniform outer diameter that is simple to manufacture.

Accordingly, for at least these reasons the amended independent claims are patentable. Further, pending claims 3, 4, 6, 7 and 10 are dependent upon the allowable independent claims 1 and 9 respectively. For at least this reason these claims are also patentable. Therefore, the Applicants respectfully request removal of the rejections and allowance of claims 1, 3, 4, 6-11 and 14.

Claim Rejections Under 35 U.S.C. §103

The Office action rejects claims 2, 5, 12 and 13 under 35 U.S.C. §103(a) as being unpatentable over Armitage, Breeze, Hill and Schuermann. The remarks presented above with respect to the rejections under 35 U.S.C. §102 are also applicable to the present rejections. Claims 2, 5, 12 and 13 are dependent claims defining additional patentable features to the

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allowable independent claims 1 and 9 respectively. For at least this reason the claims are patentable. Accordingly, the Applicants respectfully request removal of the rejection and allowance of the claims.

Double Patenting

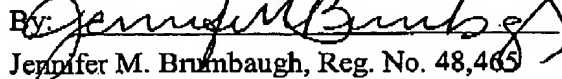
The Office action advises that if independent claim 9 is found allowable claim 8 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. Anticipating the allowance of amended independent claim 9, the Applicants have canceled claim 8 of the present application to avoid receiving the objection under 37 CFR 1.75.

Additionally, claim 6 of the present application is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 8 of co-pending Application No. 10/644,442. Anticipating allowance of both the present application and co-pending Application No. 10/644,442, the Applicants have included a timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) to overcome the provisional rejection.

Respectfully submitted,

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Dated: February 22, 2005

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Attachments